

Possible implication of oxidative stress in anti filarial effect of certain traditionally used medicinal plants in vitro against *Brugia malayi* microfilariae

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ABSTRACT

Introduction Tropical disease research scheme of World Health Organization has duly recognized traditional medicine as alternative for antifilarial drug development. Polyphenolic compounds present in traditionally used herbal medicines are natural antioxidants; however, paradoxically they may exert pro-oxidant effect. Popular drug diethyl carbamazine citrate harnesses the innate inflammatory response and the consequent oxidative assault to combat invading microbes. **Methods** With this perspective, extracts of *Vitex negundo* L. (roots), *Butea monosperma* L. (leaves), *Aegle marmelos* Corr. (leaves), and *Ricinus communis* L. (leaves) were selected to explore the possible role of oxidative rationale in the antifilarial effect in vitro. **Results** Apart from the last, other three plant extracts were reported to have polyphenolic compounds. Dose-dependent increase was found in the levels of lipid peroxidation and protein carbonylation for all the three plant extracts except *Ricinus communis* L. (leaves). Such increase in oxidative parameters also showed some degree of plant-specific predilection in terms of relatively higher level of particular oxidative parameter. High degree of correlation was observed between the antifilarial effect and the levels of corresponding oxidative stress parameters for these three plants. However, extracts of *Ricinus communis* L. (leaves) which is relatively deficient in polyphenolic ingredients recorded maximum 30% loss of motility and also did not show any significant difference in various stress parameters from corresponding control levels. **Conclusion** These results reveal that targeted oxidative stress might be crucial in the pharmacodynamics.

KEYWORDS

Medicinal plants . oxidative stress . antifilarial effect . *B. malayi*

REFERENCES